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10/648,120	08/25/2003	Stephen P. Farrell	ARC920030032US1	3193

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EXAMINER
THERIAULT, STEVEN B

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *28 May 2008*.
2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1,6-9 and 11-22* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1, 6-9, 11-22* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to the following communications: Amendment filed 05/28/2008.

This action is made Final.

2.   Claims 1, 6-9, 11- 22 are pending in the case. Claims 1, 17, and 20 are the independent claims. Claims 2-5, 10 have been cancelled.

Claim Rejections - 35 USC § 101

3.   In light of applicant's amendment to claims 20-22, the previous 101 rejection is now considered moot.

Claim Rejections - 35 USC § 103

4.   **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

The application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5.   **Claims 1, 6-9, 11-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchinson et al. (Patent No. 6152563) in view of Tognazzini et al. (Patent No. 5,731,805).**

In regard to **Independent claim 1,** Hutchinson teaches a method of interacting with a monitor, comprising:

- Modifying a portion of an output displayed on a monitor by tracking an eye gaze and by monitoring an input indicator on the monitor that reflects a user's activity wherein the output comprises at least part of a stationary target object representing an interactive component comprising at least one of a button, a scroll bar, a hyperlink, or a menu (Hutchinson column 11, lines 55-60 and Figure 9 and column 1, lines 1-25 and column 2, lines 45-51). Hutchinson teaches the users eyes are tracked to a stationary target such as a button.

- Wherein tracking the eye gaze comprises monitoring a user's eye movement in a direction of the stationary target object and further monitoring a trajectory of the input indicator on the monitor (Hutchinson column 2, lines 45-52 and column 4, lines 1-15). Hutchinson teaches the system monitors the eye movement and trajectory (See column 11, lines 1-20).

- Wherein the portion of the output is modified upon detecting the coincidence of the user's eye movement and the input indicator trajectory in the direction of the target object (See column 11, lines 45-50). Hutchinson teaches the area detected by the users gaze is magnified.

- Identifying the stationary target object through eye-gaze tracking by identifying at least one particular pixel being gazed at by the user (Hutchinson column 7, lines 1-15). Hutchinson teaches determining the target by identifying the pixel on the screen the user is looking at (See also Figure 4 and 4a). Hutchinson also teaches the number of pixels for pixel length determinations is user adjustable (See column 55-56). While the preferred setting is 2 pixels, the user can enter a value they choose. Further, the minimum movement distance is pixels is also user adjustable and is set through the interface (See column 91-92).

- Wherein modifying the portion of the output comprises selectively expanding a target object region in the portion of the output (Hutchinson column 3, lines 35-50 and column 11, lines 45-52) Hutchinson teaches modifying the region by expanding it.

Hutchinson does not expressly teach:

- Wherein modifying the portion of the output further comprises selectively contracting a region surrounding the target object region in the portion of the output, to compensate for the expanded target object region.

- Further monitoring the input indicator to detect renewed activity comprising at least one of a detected movement of a cursor or a detected movement of the user's eye and, in response to the detected renewed activity, restoring the target object to an unmodified size and restoring the output displayed on the monitor to an unmodified appearance.

However, Tognazzini teaches a eye-gaze tracking mechanism for text enlargement that expressly

teaches a process of enlarging a target object of Text and contracting a second object of text in

the same screen for the purposes of utilizing the available screen area and not enlarging the

window to display the text so that the user can see it in an enlarged manner (See figure 11, and

column 14, lines 6-37). Tognazzini expressly recites a process to determine when to expand an

article and shows the process in figure 13). Step 1305 and 1306 monitor the users gaze and

determine if the user is reading titles. The procedure specifically mentions the user is browsing

the titles only and the text is not expanded. Further, Tognazzini teaches the (See column 14, lines

24-51) that the reduction and expansion can be set to operate by a user set command and can

occur instantaneously. Additionally, Step 1319 of figure 13 shows a step that the text is reduced

once a user is not reading the text and the system provides for the user to set their preference as

to how the text is reduced once they stop reading it (See column 15, lines 1-41). Therefore,

Tognazzini clearly shows a repetitive gaze monitoring step 1305 and in following the teachings as

recited above, a user can view a title and the system will not expand the text. The user can gaze

at the text of the article, and the system will expand the text and then decide they don't want to

read it. By user preference, a gaze away from the text can cause an instantaneous revert back to

original size of the text, which would revert the screen to the original size. At that point, the user

can resume viewing titles only and never gaze at the text associated with the title, as it is the

users gaze in Tognazzini that determines when to expand. The user gaze moves from title to title

and the screen will be displayed as originally presented to the user in an unmodified appearance.

An alternative scenario can be the user views a title and then the text and the system expands

the article. The user setting is set to instantaneous snap back. The user can receive a phone call,

which would take the gaze of the user away from the screen and the system would then

determine that the user is not looking at the text or title and the system would wait to perform a

function or until the user executes a command or gaze at the screen. The screen would remain

displayed to the user in original form. The user returns to the screen and resumes gazing at the

titles and never gazes at the text of the titles and therefore the screen would remain in its original

state. There are a number of permutations that can be provided similarly where the user looks away from the screen and then glances back and the system will return the text to original size because that is what is explained in figure 13 as the procedure the system will follow. Coupled with the instantaneous reduction preference the Examiner can think of several more obvious variations of the theme presented above. Hutchinson and Tognazzini are analogous art because they both teach processes of eye-gaze tracking and both teach processes of tracking objects on the display.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention, having the teachings of Tognazzini and Hutchinson, to modify the system of Hutchinson to include the contraction/expansion feature of Tognazzini and to restore the screen to its original format after a gaze. The motivation to combine comes expressly from the teachings within Hutchinson (See column 2, lines 1-25), that eye gaze technology allows handicapped users or other users to use the system and interact with the computer completely through eye movements. Further, Hutchinson teaches the system can be used in a variety of applications that require eye gaze functionality.

With respect to **dependent claim 6**, Hutchinson teaches determining a modification time based on data derived concurrently from the user's eye gaze (See column 11, lines 40-50). Hutchinson teaches the user dwells on the location and a red rectangle is applied to the object for a certain period of time.

With respect to **dependent claim 7**, Hutchinson teaches determining a motion direction of the input indicator (see column 3, lines 50-67 and column 12, lines 26-40). Hutchinson teaches monitoring when the user drags or moves the cursor in a given direction.

With respect to **dependent claim 8**, Hutchinson teaches identifying the target object based on data derived concurrently from the eye gaze and the direction of movement of the input indicator (See column 11, lines 40-50 and column 12, lines 20-40).

With respect to **dependent claims 9 and 11**, Hutchinson teaches the user can interact with menus and buttons (See column 11, lines 55-65). Hutchinson does not specifically mention identifying the portion of the output based on boundaries of interactive graphical user interface components. However, this limitation would have been obvious to one of ordinary skill in the art at the time of the invention, in view of Tognazzini, because Tognazzini teaches a process of determining text boundaries as shown in Figure 11, where there are four columns, and the expanding and contracting occurs around the text between the columns of data (See figure 11 and column 14, lines 6-51). Tognazzini also teaches the process of expanding the text is so that the user can interact with the text and read it (See column 15, lines 10-25). Tognazzini further teaches that the components, text, images, audio can be selected and magnified (See column 8, Lines 5-10).

With respect to **dependent claim 12**, Hutchinson teaches the input indicator is inputted by an input device that comprises any one or more of a mouse, a touch screen, a tablet computer, a personal digital assistant, a stylus, and a motion sensor (See column 12, lines 40-60 and column 3, lines 50-67).

With respect to **dependent claims 13- 16**, as indicated in the above discussion, Hutchinson in view of Tognazzini, teach every element of claim 5 and 12.

Hutchinson does not expressly teach *transforming the portion of the output by hiding an area of the monitor by an increase in side of the target object or moving one or more objects on the monitor towards one or more edges or reducing a size of one or more objects located adjacent the target object while maintaining a change or original appearance and restoring the target object to the original appearance when the eye-gaze indicates the object is no longer selected.*

However, these limitations would have been obvious to one of ordinary skill in the art at the time

of the invention, in view of Tognazzini, because Tognazzini teaches a process of moving an

object to the edges of the screen to accommodate the selected object (See figure 11) and a

process of reducing the size of the objects within the screen adjacent to the selected object (See

column 14, lines 6-67). Tognazzini also shows restoring the image to the original shape (see

column 14, lines 24-50) and a process of hiding an area of the monitor that is covered by the

enlarged object (See figure 12, objects behind are hidden or overlapped).

In regard to **Claims 17- 19,** claims 17-19 reflect the system comprising computer readable

instructions for performing the steps of method claims 1, 6 -7, respectively, and are rejected along

the same rationale.

In regard to **Claims 20-22,** claims 20-22 reflect computer program product comprising computer

readable instructions for performing the steps of method claims 1, 6 -7, respectively, and are

rejected along the same rationale.

**It is noted that any citation to specific pages, columns, lines, or figures in the prior art
references and any interpretation of the references should not be considered to be limiting
in any way. A reference is relevant for all it contains and may be relied upon for all that it
would have reasonably suggested to one having ordinary skill in the art. In re *Heck,* 699
F.2d 1331, 1332-33,216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting In re *Lemelson,* 397 F.2d
1006,1009, 158 USPQ 275, 277 (CCPA 1968)).**

Response to Arguments

Applicant's arguments with respect to claims 1 and 6-9, 11-22 have been considered but are not

persuasive.

Applicant's argument that Hutchinson is distinguished from the new claim limitations

Applicant argues that Hutchinson teaches a vastly different approach to the claims because they

determine the Hutchinson uses animated graphical objects to notify the user that activity has occurred on

the interface (See arguments page 11, top).

This argument is not moot in light of the rejection above where the Examiner relied on two references to teach the limitations of the claims and specifically relied on Tognazzini to teach the new limitations of the claims.

Applicant argues that Tognazzini fails to detect renewed activity

Applicant argues that Tognazzini fails to detect renewed activity because they interpret the single embodiment where the text of a previous article is reduced slowly and the use focuses on a new article and therefore the display is not restored to original size and appearance upon renewed activity by the user (See argument page 12).

The Examiner disagrees.

The new limitation simply does not provide a boundary as to when the renewed activity has occurred and it appears from applicant's arguments that the renewed activity is a period of time after the previous gaze. To the extent of how long is undecided and as to where the user gazes is also undecided. After all it is the user that makes the selection and that is unpredictable. The examiner provides a rationale and interpretation above in the rejection and simply put, Tognazzini shows the monitoring process in figure 13 as a loop and provides that if the user merely looks at titles then the interface is not expanded. Further, the disclosure recites that as the user looks at a text it can be expanded and then the user looks away or to another location, the user preference can be to have the interface instantaneously snap back to original form. Therefore, the user can simply view titles after that or never gaze long enough at a text article to have it expand. For example, Figure 2 and 4 outlines the gaze detection system and specifically mention that "one of ordinary skill in the art will understand that the gaze tracking device may be configured to provide gaze position **only when the user has shown interest in a displayed area for a sufficient time, or that the application or system logic may be utilized to detect when a user has shown an interest in monitoring the gaze coordinates over some period of time**" (See column 9, lines 47-61).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the

extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from

the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date

of this final action and the advisory action is not mailed until after the end of the THREE-MONTH

shortened statutory period, then the shortened statutory period will expire on the date the advisory action

is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX

MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Steven B. Theriault whose telephone number is (571) 272-5867. The examiner can

normally be reached on M, W, F 10:00AM - 8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Weilun Lo can be reached on (571) 272-4847. The fax phone number for the organization where this

application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained from

either Private PAIR or Public PAIR. Status information for unpublished applications is available through

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or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-

1000.

/Steven B Theriault/
Patent Examiner
Art Unit 2179